

What is claimed is:

1. A medical treatment article, comprising:  
at least one fluid control film component having at least one microstructure-bearing surface with a plurality of channels therein that permit directional control of a liquid.
2. The article of Claim 1, wherein the article is selected from the group consisting of wound dressings, wound drains, tympanostomy fluid wicks, intravenous access site dressings, drug delivery dressings, surgical drape, and sweat collection patches.
3. The article of Claim 1, wherein the microstructure-bearing surface is hydrophilic.
4. The article of Claim 1, wherein the article further comprises an absorbent pad positioned in fluid communication with the fluid control film.
5. The article of Claim 1, wherein the channels have a cross-sectional geometry selected from the group consisting of V-shaped channels, rectangular-shaped channels or combination V- and rectangular-shaped channels.
6. The article of Claim 1, wherein the fluid control film comprises a plurality of primary channels having at least two secondary channels, each of the secondary channels forming at least one notch.
7. The article of Claim 6, wherein the primary channels have a depth of from 50 to 3000 microns and the depth of the secondary channels is from 5 to 50 percent of the depth of the primary channels.
8. The article of Claim 1, wherein the channel has an included angle between about 10 degrees and 120 degrees.
9. The article of Claim 1, wherein the channels are between about 5 and 3000 microns deep.

5

10

15

20

25

30

09961091.092101

10. The article of Claim 1, wherein the channels are between about 50 and 1500 microns deep.

11. The article of Claim 1, wherein the channels are between about 100 and 1000 microns deep.

12. The article of Claim 3, wherein the channel is open and has an included angle Alpha, Alpha being between about 10 and 120 degrees, and the hydrophilic surface has a contact angle with water of Theta, Theta being equal to or less than the sum of 90 degrees minus one-half Alpha.

13. The article of Claim 1, wherein the channels are substantially parallel throughout their length.

14. The article of Claim 1, wherein the channels comprise a thermoplastic material selected from the group consisting of polyolefins, polyesters, polyamides, poly(vinyl chloride), polyether esters, polyimides, polyesteramide, polyacrylates, polyvinylacetate, hydrolyzed derivatives of polyvinylacetate and combinations thereof.

15. The article of Claim 1, wherein the channels comprise a thermoset material selected from the group consisting of polyurethanes, acrylates, epoxies and silicones.

16. The article of Claim 1, wherein the channels comprise a pressure sensitive adhesive material.

17. The article of Claim 1, wherein the channels are open along at least a major portion of their length.

18. The article of Claim 1, wherein the channels are closed along at least a major portion of their length.

19. The article of Claim 1, wherein the article is a wound dressing and the fluid control film is adapted to be positioned in fluid communication with a wound.

5 20. The article of Claim 1, wherein the article is a wound dressing further comprising one or more absorbent pads positioned in fluid communication with the fluid control film.

21. The article of Claim 20, wherein the fluid control film comprises a separate piece of film.

22. The article of Claim 20, wherein the channels are formed within an adhesive layer of the dressing.

23. The article of Claim 20, wherein the channels are formed within a backing layer of the dressing.

24. The article of Claim 1, wherein the article is a combined wound dressing and wound drain, and the fluid control film is adapted to be inserted into a wound.

20 25. The article of Claim 1, wherein the article is a wound dressing and the fluid control film is adapted to supply a medicament to a wound site.

26. The article of Claim 1, wherein the article is a wound drain.

25 27. The article of claim 26, wherein the fluid control film is branched at one end.

28. The article of claim 26, wherein the fluid control film is adapted to a vacuum generator at one end.

30 29. The article of claim 26, wherein the drain further comprises one or more absorbent pads positioned in fluid communication with the fluid control film.

05961091-092101  
10  
15  
20  
25  
30



### **Medical Article Having Fluid Control Film**

The present invention provides medical articles having a fluid control film component which comprise a sheet having microchannels that permit directional flow of a liquid. Articles incorporating the fluid control film include: wound dressings, wound drains, tympanostomy fluid wicks, intravenous access site dressings, drug delivery dressings, and sweat collection patches.

5

09961091 092101